EASTERN RESEARCH GROUP, INC.

MEMORANDUM

TO: Bill Maxwell, U.S. Environmental Protection Agency (EPA),
Office of Air Quality Planning Standards (OAQPS) (MD-13)

FROM: Heather Wright, Eastern Research Group (ERG), Morrisville

DATE: January 5, 1998

SUBJECT: Final Summary of November 20, 1997 Meeting of the Industrial Combustion Coordinated Rulemaking (ICCR) Process Heater Work Group

---

1.0 INTRODUCTION

- The purpose of the meeting was to allow attendees to discuss various activities of the ICCR Process Heater Work Group (PHWG). A meeting agenda outlining the topics of discussion is included as attachment 1.
- The meeting was held on November 20, 1997 in Houston, Texas.
- A complete list of meeting attendees (with their affiliations) is included as attachment 2.

2.0 SUMMARY OF DISCUSSION AND DECISIONS

The meeting discussion generally followed the agenda. Topics of conversation are summarized in the following sections:

2.1 Facilitation and Meeting Ground Rules

- Mary Lalley will act as facilitator during the PHWG meetings. As meeting facilitator, Ms. Lalley will be responsible for ensuring that all meeting attendees receive equal participation and that the conversations remain focused on agenda topics.

- It was agreed that when an individual comes before the Work Group to lead discussion of an agenda item, that person should begin by summarizing the purpose of their talk and generally what they expect to come out of the discussion (what type of feedback they hope to receive from the group, if any, or whether they are making a presentation to the Work Group without soliciting any input).

- The Work Group established the following list of "ground rules" for meetings:
  - all persons at the meeting are equal participants
  - all persons should give full attention to whomever is speaking
  - all persons should respect each others points of view
  - no personal attacks should be made
  - appropriate language must be used at all times, and
  - helping to facilitate the discussion/structuring the meeting in a more productive manner is welcome at any point where the topic of conversation strays from the agenda.

2.2 Conflict of Interest Discussion

Bill Maxwell presented information which addressed concerns regarding conflicts of interest. The information provided is included as attachment 3 and is summarized, along with the Work Group's response, below.

- Eastern Research Group (ERG) will provide both meeting facilitation support, as well as technical support for the PHWG. Facilitation support includes working with the co-chairs to conduct meetings, but does not include making decisions for the group, such as deciding to bring topics of discussion to a close. Technical support includes data analysis, data gathering, and documentation, but again does not include any decision making.

- Mary Lalley will continue to provide technical support outside of the Work Group meetings, but during meetings will only assist the group as the facilitator. If during a meeting there is a technical presentation to be made, it will not be presented by Ms. Lalley, but rather by another ERG staff member or by Bill Maxwell.

- It was the general consensus of the Work Group that no conflict of interest is breeched by a representative of ERG providing both facilitation and technical support to the Work Group.

2.3 Satisfaction Survey and the ICCR Process

Bill Maxwell presented information concerning the ICCR satisfaction survey and the overall ICCR process (handouts are provided as attachment 4). The following is a summary of the presentation:

- In general, it is EPA's belief that the individuals who responded to the survey were those that were dissatisfied with one or more aspects of the process and that those with more positive comments did not respond as readily. Thus, the overall response tended to slant towards some level of dissatisfaction.

- One of the major process changes which has resulted from the survey is that all work group meetings will now be facilitated. In addition, there will be a push to return to the model process outlined in the ICCR document, while still allowing the work groups to tailor their agendas in a manner to meet their individual schedules.

- EPA will be taking a greater leadership role in the process, especially at the work group level. EPA will be primarily focused on maintaining the entire ICCR schedule. It was emphasized that in the interest of meeting deadlines, if a work group has trouble meeting a particular deadline, then the Coordinating Committee (CC) or EPA will step in to facilitate the process. Further, EPA will have final determination on all matters. EPA's duty is to make sound decisions based on information and recommendations from the CC, rather than allowing the individual work groups to make overall decisions.

- It was explained that if there is no consensus within the PHWG on a particular issue, the stakeholder co-chair must present the alternate options to the CC. The CC, in turn, will pass the varying opinions and any additional CC recommendations on to EPA. In this manner, if the Work Group cannot concur on a particular point, the majority and minority views will be reviewed by EPA before final decisions are made.

2.4 Pollution Prevention

John Ogle summarized the CC meeting discussion concerning pollution prevention. The conversation that followed is outlined below:

- A Pollution Prevention (PP) Subgroup is in the process of being formed. The focus of this Subgroup will be to investigate pollution prevention tactics for combustion units, such as using more efficient combustion practices, using less fuel, making changes to the process that a combustion unit is serving, or reusing flue gas. A member of the PHWG was requested as a representative on the Subgroup.

- A suggestion was made that those individuals who would like a better idea of what pollution prevention means for combustion practices should consult the pollution prevention paper that has been drafted by the Environmental Caucus.

- The Work Group discussed whether or not excess air control is a viable pollution prevention option for process heaters. A question was raised as to whether this should be debated within the Work Group or addressed by the PP Subgroup. Overall, the Work Group agreed that the pollution prevention representative should present all available information on this subject to the PP Subgroup. The representative will then bring the opinion of the Subgroup back to the PHWG for further discussion if necessary.

- The Work Group selected Janet Peargin as their representative on the PP Subgroup.

2.5 Economic Analysis Work Group Discussion

Tom Walton and Glenn Sappie presented the Economic Analysis Work Group's (EAWG) data development and analysis schedule which was also presented to the CC earlier in the week (see handouts provided as attachment 5). The following information was provided and discussed:

- Mr. Walton and Mr. Sappie explained that the EAWG has requirements to satisfy for the ICCR process, but that their analysis should also assist the PHWG in making regulatory option decisions.

- The EAWG must present their results to the CC in August 1998. Preliminary data supplied by source work groups to the EAWG is needed by January 1998. For process heaters, this will include population information, estimated costs of controls, an estimate of the coverage of regulatory options (such as stringency), as well as the type or form of data that the PHWG will be supplying to the EAWG later in the process.

- The representatives of the EAWG explained that two types of data are required for the economic analysis: 1) "must have data" and 2) "data needed for analysis". The first category of data must be developed by the Work Group to support the economic analysis. The second category of data is that which the EAWG could estimate through their own research, but would likely be more thorough if the PHWG supplied the information or at least supplemented it. Detailed descriptions of both types of data are included as attachment 5.

- Model plants (also known as model affected facilities) were discussed. Previous examples utilized by EPA were described by Tom Walton. In addition, it was expressed that model plants are not the only means by which cost estimates and cost distributions can be derived. The PHWG must decide what is the best

approach to use. Several individuals believe that it will be overly time consuming to build models for all the types of industries that have process heaters, because they are quite numerous and varied. The EAWG recommended linking model sources with the ICCR inventory database. Suggestions from PHWG members included attributing a cost to each unit in the database by Standard Industrial Classification (SIC) code, breaking the models down into category types, such as "can-type" and "box-type" units, or by unit size or fuel type. An EPA representative also suggested that for industries, such as petrochemical, where there may only be two types of units, that the models for those industries are the unit types themselves. For categories such as miscellaneous, the Work Group may be able to develop a generic model unit if the regulatory alternatives are based on percent reductions that are not unit specific.

- It was agreed by the Work Group that there are numerous options for deriving estimates of regulatory costs for the EAWG and that this task must be further discussed at a future meeting. A decision was also made that all members of the PHWG will begin to develop preliminary model plant descriptions for their industries using guidance provided by the EAWG prior to the next meeting.

2.6 Good Combustion Practices Subgroup Report

Chuck Feerick presented a status report for the Good Combustion Practices (GCP) Subgroup (see handouts presented as attachment 6). The following is a summary of the presentation:

- Mr. Feerick explained that their focus has been on indirect gas-fired process heaters and that the Subgroup has reviewed the Petroleum Environmental Research Forum (PERF) study to learn what types of variables have an impact on hazardous air pollutant (HAP) emissions for such units. In addition, Mr. Feerick suggested that good combustion practices be considered as the maximum achievable control technology (MACT) floor and as beyond-the-floor controls for these equipment types.

- The GCP Subgroup concluded that PERF data indicate that for indirect gas-fired units, if the burner stoichiometric ratio is maintained between 1 and 2, HAP emissions will be minimized, but that outside this range, emissions could increase. This range is a viable option for the MACT floor, because it is believed that greater than 12 percent of the population is currently achieving this ratio. Beyond-the-floor measurements might include operator training or continuous monitoring systems for O_2.

- A question was raised as to whether or not add-on controls, such as the use of wet scrubbers if burning coal, are a viable regulatory alternative. It was mentioned that the American Petroleum Institute (API) has recently published a document which

estimates costs for certain control types and that this may be a good source of information for the Work Group.

- The next steps for the Work Group and Subgroup are to: decide how the stoichiometric ratio could be monitored (for example, by measuring stack oxygen content), determine if a regulatory cut-off for small units should exist (the miscellaneous category has numerous smaller units that operators have little control over), decide whether the 1 to 2 ratio range can be generically used for all process heaters or only those in the petrochemical industry, and develop a complete list of beyond-the-floor options (such as operator training programs).

- There was general concern from the Work Group that process alterations, such as startup, shutdown, or malfunctions will impact the stoichiometric ratio. An environmental group representative mentioned that the Environmental Caucus may push for limits on such excursions, as this is when the majority of HAP emissions are known to occur. It was agreed that Jane Williams, Lawrence Otwell, Bruno Ferraro, and any other interested members will attempt to identify when process excursions and malfunctions may cause the stoichiometric ratio to fall outside of the 1 to 2 range for gas-fired process heaters. This information is to be forwarded to Chuck Feerick, in addition to any information on State or local regulations which cover process excursions (for both gas-fired and other-fired units). The GCP Subgroup will summarize the information for the January meeting.

- It was suggested that the GCP Subgroup bring other individuals into the group who are knowledgeable about fuels other than gas to compensate for the Subgroup's lack of expertise in this area. It was also suggested that information be obtained from the Boiler Work Group who are investigating combustion of other fuels. It was decided that Bill Maxwell will speak with Jim Eddinger, EPA co-chair of the Boiler Work Group, on the status of their GCP Subgroup to facilitate an exchange of information with the Process Heater GCP Subgroup.

- The Work Group agreed that Jane Williams, John Ogle, and Lawrence Otwell will join the GCP Subgroup.

2.7 Direct-Fired Units Discussion

Bill Maxwell reviewed the CC's recommendation in March to investigate how direct-fired units potentially covered under other MACT standards will being handled and to look into whether direct-fired units not being addressed by other MACT standards are candidates for future Agency action (see handouts presented as attachments 7 and 8). Following is a summary of the information provided by EPA representatives and the Work Group's discussion regarding direct-fired units:

- An EPA representative explained to the Work Group that EPA will focus their efforts in the ICCR process on indirect-fired process heaters. Both criteria and air toxics emissions are being examined for units covered by other MACT standards. In addition, for direct-fired units not currently addressed by other MACT standards, the Emissions Standards Division (ESD) will consider them in future program plans. The EPA may decide to focus on direct-fired units in the ICCR process if information becomes available indicating that a particular category may be a significant source of HAP emissions.

- EPA's focus is not a mandate to the PHWG as to how they should address the two unit types. An EPA representative emphasized that the Work Group must decide how they want to address direct- and indirect-fired process heaters now that EPA has announced that they will focus their resources on indirect-fired units. It was also discussed that EPA may not be able to lend assistance to the Work Group on direct-fired units should they choose to pursue them. Further, if the Work Group decides to focus on indirect-fired units, but EPA decides later to also focus on some direct-fired units, EPA may ask the Work Group to broaden their efforts to then include them.

- A point was raised that direct-fired units are difficult to characterize, as they fall into many different types of industries, and have widely varying process information. As such, they may be better addressed under the other source category MACTs. Further, there was some concern that the Work Group does not have the resources and knowledge within the group to adequately address direct-fired units.

- The Work Group formed a Direct-Fired Process Heater Subgroup to develop an approach for direct-fired units. The Subgroup consists of the following members: Bruno Ferraro, Lawrence Otwell, Dave Smith, Jane Williams, and Oliver Stanley.

- It was agreed that Jane Williams will meet with the Environmental Caucus to solicit opinions as to how direct-fired process heaters should be handled. Jane will inform the Work Group of the Environmental Caucus position prior to the January meeting. Jane will also investigate types of direct-fired process heaters that will be captured under the area source rule in coordination with EPA and will inform the Work Group of these findings.

- While information on direct-fired units is pending, the Work Group agreed to focus on indirect-fired process heaters according to the time line previously established and to discuss how direct-fired units will be handled at the next meeting once further information from the Environmental Caucus and the Direct-Fired Process Heater Subgroup is presented. The next opportunity to present an opinion on this issue to the CC is at the February meeting.

2.8 Overview of Work Group's Progress

- An industry representative made a suggestion that at the beginning of each meeting, an overall summary of the Work Group's progress to date should be made, in addition to what objectives must be accomplished next by the group to keep on schedule. Emphasis should be placed on the "big picture" to keep the Work Group focused on their overall goals.

- It was agreed that the milestone tracking table was a good exercise in that it defined the tasks which must be completed by the Work Group and by what dates. An EPA representative suggested that the Work Group examine the schedule and decide when certain items will be finalized to establish at which meetings information will be submitted to the CC.

- The Work Group agreed that several pieces of information are necessary for the next meeting. These include a finalized list of good combustion practices, a decision on how to handle direct-fired units, identification of testing needs, a summation of add-on control options, and descriptions of potential model plants. It was also agreed that John Ogle and Lawrence Otwell will consider testing needs for other-fired units.

- The Work Group agreed that the goals to be reached by February are as follows: 1) determine MACT floor for gas- and other-fired indirect process heater units, 2) formulate a list of regulatory alternatives, and 3) make emission testing recommendations (pending ICCR survey database results).

2.9 Topics for Discussion at Future Meetings

The Work Group suggested that the following topics be included for discussion at a later meeting:

- standard development on a heat input basis or on a heat output basis;
- types of data and information that must be supplied to the EAWG;
- outstanding/unresolved issues;
- how pollution prevention will be addressed by the PHWG;
- site visits; and
- subcategories.

2.10 Additional Action Items

- All members of the Work Group are to review the spreadsheets provided by Lee Gilmer (see file described as "Lee's Tables" in the miscellaneous download area of the technology transfer network (TTN) process heater board) for corrections. Any comments must be forwarded to Mr. Gilmer by early to mid-January. Mr. Gilmer

will summarize control information available in the inventory database at the January meeting.

- It was agreed that all members of the Work Group will review the updated (version 2) ICCR survey database (following posting to the TTN in mid-December) for comment prior to the January meeting.

3.0 UPCOMING MEETINGS

- The next meeting is scheduled for January 20 and 21 in San Fransico, CA. Jim Seebold and Janet Peargin will locate a facility in San Fransico at which to hold this meeting. A refinery tour is tentatively schedule for those interested on January 19 or January 22.

- The following meeting is scheduled for February 26 in Winston-Salem, NC.

- A meeting is tentatively scheduled for April following the CC meeting.

These minutes represent an accurate description of matters discussed and conclusions reached and include a copy of all reports received, issued, or approved at the November 20, 1997 meeting of the Process Heater Work Group. Bill Maxwell, EPA.

ATTACHMENT 1

FINAL AGENDA
ICCR PROCESS HEATERS WORK GROUP

FINAL AGENDA
ICCR PROCESS HEATERS WORK GROUP

November 20, 1997
Red Lion Hotel
Houston Galleria Area
2525 West Loop South, Houston, Texas

When	What	Who
8:00 - 9:00	Presentation of AB2588 Data	API
9:15	Open	Bill Maxwell
9:15 - 9:30	Facilitator introduction	Mary Lalley
9:30 - 9:40	Conflict of interest discussion	Bill Maxwell
9:40 -10:15	Satisfaction survey and ICCR process	Bill Maxwell
10:15-10:30	Break	
10:30-11:00	Economic Work Group Discussion	Economic Work Group Representative(s)
11:00-12:00	Good Combustion Practice Subgroup Report	GCP Subgroup
12:00- 1:00	Lunch	
1:00 - 1:30	Direct-fired units	Lee Gilmer
1:30 - 2:30	Revisit approach MACT floor Subcategories	Lee Gilmer
2:30 - 2:45	Break	
2:45 - 3:15	Discussion of schedule	Bill Maxwell
3:15 - 3:30	Next steps Model plants Next meeting	Bill Maxwell
3:30	Adjourn	Bill Maxwell

ATTACHMENT 2

MEETING PARTICIPANTS

MEETING PARTICIPANTS

Chuck Feerick, Exxon Company, USA

Bruno Ferraro, Grove Scientific Company

Klane Forsgren, Sinclair Oil Corporation

Lee Gilmer, Texaco, Inc.

Tim Hunt, American Petroleum Institute

Greg Johnson, Shell Development Company

Mary Lalley, Eastern Research Group, Inc.

Arthur Lee, Texaco, Inc.

Bill Maxwell, EPA, Office of Air Quality Planning and Standards

Diane McConkey, EPA, Office of General Counsel

John Ogle, Consultant, Dow Chemical Company

Lawrence Otwell, Georgia-Pacific Corporation

Janet Peargin, Chevron Corporation

Fred Porter, EPA, Office of Air Quality Planning and Standards

Glenn Sappie, Div. of Air Quality, NC Department of Environment and Natural Resources

David Schanbacher, Office of Air Quality, TX Natural Resource Conservation Commission

Jim Seebold, Chevron Research & Technology Company

Dave Smith, Central Soya Company, Inc.

Oliver Stanley, Cargill, Inc.

Tom Walton, EPA, Office of Air Quality Planning and Standards

Jane Williams, California Communities Against Toxics

Heather Wright, Eastern Research Group, Inc.

ATTACHMENT 3

CONFLICT OF INTEREST DISCUSSION

(Overheads unavailable electronically, please refer to docket copy.)

ATTACHMENT 4

SATISFACTION SURVEY AND THE ICCR PROCESS

(Handouts unavailable electronically, please refer to docket copy.)

ATTACHMENT 5

ECONOMIC ANALYSIS WORK GROUP DISCUSSION

(Handouts unavailable electronically, please refer to docket copy.)

ATTACHMENT 6

GOOD COMBUSTION PRACTICES SUBGROUP REPORT

(Handouts unavailable electronically, please refer to docket copy.)

ATTACHMENT 7

DIRECT-FIRED UNITS DISCUSSION

(Overheads unavailable electronically, please refer to docket copy.)

ATTACHMENT 8

PROCESS HEATER COVERAGE UNDER THE ICCR AND OTHER CATEGORIES: TABLES 1-4

(Handouts unavailable electronically, please refer to docket copy.)